# RESEARCH, DEVELOPMENT & TECHNOLOGY TRANSFER QUARTERLY PROGRESS REPORT

Wisconsin Department of Transportation DT1241 02/2011

#### **INSTRUCTIONS:**

Research project investigators and/or project managers should complete a quarterly progress report (QPR) for each calendar quarter during which the projects are active.

| Wis                                      | DOT research program                   | category:                                 | Report period year: 2013  Quarter 1 (Jan 1 – Mar 31) |                       |  |   |                     |  |  |
|--|--|---|--|-----------------------|--|---|---------------------|--|--|
|  | Policy research<br>Other               | sin Highway Research Program<br>fund TPF# |  |                       | Quarter 2 (Apr 1 – Jun 30) Quarter 3 (Jul 1 – Sep 30) Quarter 4 (Oct 1 – Dec 31) |   |                     |  |  |
| Proj                                     | ect title: Aesthetic Coating           | gs for Concrete B                         | ridge (  | Components            |  |   |                     |  |  |
| Project investigator: Dr. Al Ghorbanpoor |  |   | Phone: 414-229-4962                                  |                       |  | E-mail: algh@uwm.edu                    |                     |  |  |
| Administrative contact: Nikki Hatch      |  |   | Phone:   |                       |  | E-mail:                                 |                     |  |  |
| WisDOT contact: Travis McDaniel          |  |   |  | e: 608-266-5097       |  | E-mail: travis.mcdaniel@dot.state.wi.us |                     |  |  |
| WisDOT project ID: 0092-13-05            |  |   |  | project ID:           |  | Project start date: 8/22/2012           |                     |  |  |
| Original end date: 11/21/2014            |  |   | Current end date: 11/21/2014                         |                       |  | Number of extensions: 0                 |                     |  |  |
| Pro                                      | ject schedule status:<br>⊠ On schedule | ☐ On revis                                | ed sch   | edule                 | ad of s  | chedule                                 | Behind schedule     |  |  |
| Pro                                      | ject budget status:                    |   |  |                       |  |   |                     |  |  |
|  | Total<br>Project Budget                | Expenditur<br>Current Qua                 |  | Total<br>Expenditures |  | % Funds<br>Expended                     | % Work<br>Completed |  |  |
|  | ¢120 000 00                            | <u>ቀ</u> ር በበር በበ                         |  | ¢21 000 00            |  | 260/                                    | 200/                |  |  |

#### **Project description:**

The objectives of this study are to investigate methods and products that may be used in the aesthetic and protective coating of bridge concrete components and to develop a guideline for cost-effective bridge coating practices for concrete members. A series of concrete coating systems will be identified and tested in the laboratory to evaluate their performance under simulated environmental conditions that are similar to those experienced by bridge components in Wisconsin. Wisconsin bridge sites, where coating failures and problems have occurred, have been visited to identify and evaluate the structural details and other factors that have contributed to such coating failures. Upon completion of the testing and evaluation program, guidelines and specifications language will be developed for selection, application, and maintenance of such coating materials.

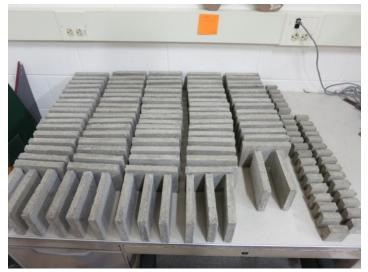
**Progress this quarter** (includes meetings, work plan status, contract status, significant progress, etc.):

The research staff poured all concrete samples required for laboratory testing.





The formwork was removed following a seven day moist curing period, and the concrete samples were allowed to cure for an additional 21 days. During this period the properties of each concrete mix (large and small samples) were evaluated.







A sack rub finish was provided to the concrete samples, where required, in preparation for the application of the coating systems.

## Anticipated work next quarter:

During the next quarter, the research staff will apply the selected coating systems and after allowing the coatings to cure for a period of 14 days, laboratory testing will begin.

## **Circumstances affecting project or budget:**

Difficulty obtaining coating sample from Sherwin Williams because production was ceased during winter months.

### Attach / insert Gantt chart and other project documentation

| Quarters/Tasks          | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------------|---|---|---|---|---|---|---|---|---|
| 1. Literature Review    |   |   |   |   |   |   |   |   |   |
| 2. Survey               |   |   |   |   |   |   |   |   |   |
| 3. Interim Report       |   |   |   |   |   |   |   |   |   |
| 4. Laboratory Testing   |   |   |   |   |   |   |   |   |   |
| 5. Future Research      |   |   |   |   |   |   |   |   |   |
| 6. Project Deliverables |   |   |   |   |   |   |   |   |   |
|                         |   |   |   |   |   |   |   |   |   |
|                         |   |   |   |   |   |   |   |   |   |

#### FOR WISDOT USE ONLY

| Staff receiving QPR: | Date received: |
|----------------------|----------------|
| Staff approving QPR: | Date approved: |